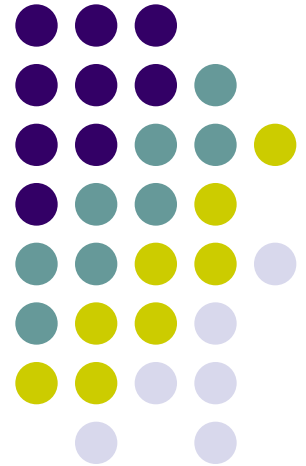


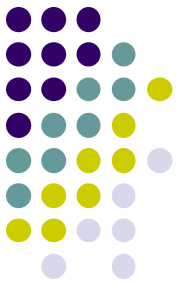
Inch by Inch, Mile by Mile, Byte by Byte

Arizona

Jane Smith Patterson

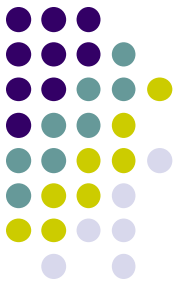
janesmithpatterson@gmail.com





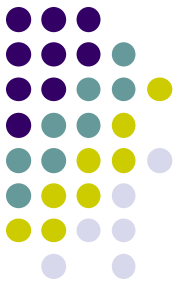
NC-Long Commitment 1984+

- 1984 1st digital statewide network
- 1987 1st fiber-supercomputer to UNC
- 1994 Statewide Fiber Backbone for State
- Gigabit Connection Tests for G8 Japan-Duke
- NC Rural Internet Access Authority 2000
- Receives \$30 MILLION from MCNC
- 2/3rds distributed throughout state for broadband
 - 2004 First State Funding \$500K
- NCHICA



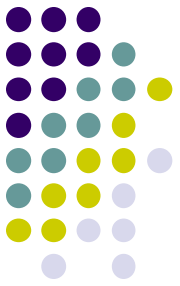
Adoption & Availability

- Research Reports & Workshops
- Infrastructure Inventory-April 2001
- Gap Analysis
- Citizen Survey - 8 surveys
- Local Government Survey
- E-government training
- Digital Literacy Training Survey
- Ebusiness Workshops



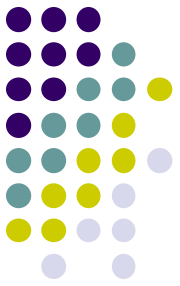
Research Reports

- E-learning Summit 2002 - Elearning Portal2012, Virtual School, elearning com.
- E-health Survey 2002-2010 NCTN
- E-agriculture Survey NASS (National Agricultural Statistics Services)
- Reports:
 - Making Connections-Citizens Community Engagement Handbook
 - Ebusiness Manual
 - Broadband Access Overview



Adoption Continued

- Public Engagement grants
- Ecommunities Planning grants
- NC Tech Force
- Ecommunities Public Access Grants
- Telecenters (Tier I and Tier 2 counties)
- Public Access Centers all 85 Rural counties
- Urban Areas Could Opt In



Adoption - Training

- Public Access Grants Training
 - Canadian collaborative
- Digital Literacy Training RFP
- Telecenters RFP Tier I and Tier 2
- Training – Harvard, UNC & Companies
- Utilize High Tech Sites



Adoptions - Applications

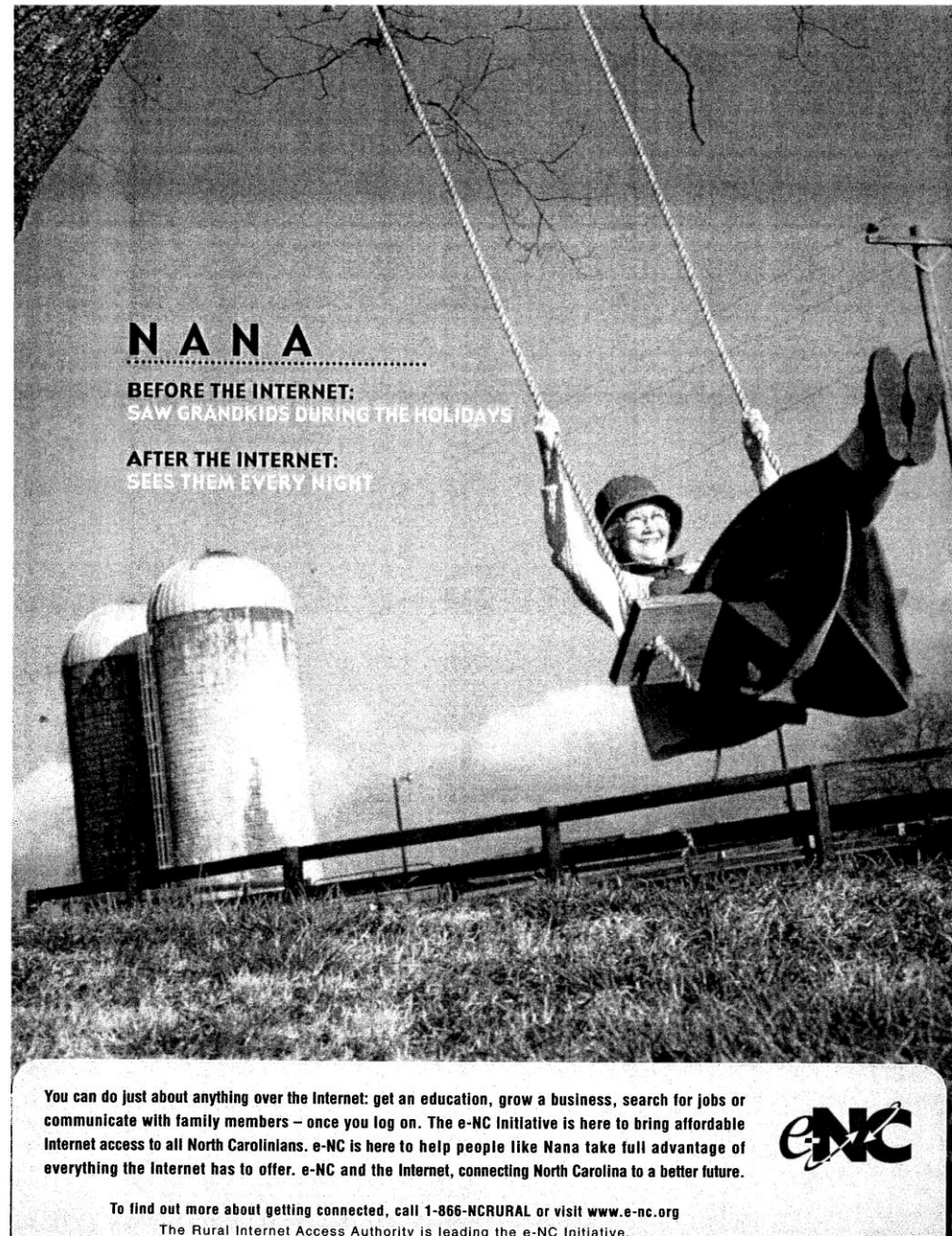
- Surveys assisted ecommunities
- Cross county and cross economic development regions collaboratives

Connectivity

- Map of State
- Individual Counties Development of Connectivity Needs
- Gap Analysis assisted by state with ecounties
- Incentives Committee RFI and RFP \$13.5 million

Communications

1. TV and radio
2. Newspapers
3. Posters
4. Plaques for Public Access
5. Training on Communications




N A N A

BEFORE THE INTERNET:
SAW GRANDKIDS DURING THE HOLIDAYS

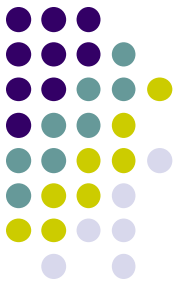
AFTER THE INTERNET:
SEES THEM EVERY NIGHT

You can do just about anything over the Internet: get an education, grow a business, search for jobs or communicate with family members – once you log on. The e-NC Initiative is here to bring affordable Internet access to all North Carolinians. e-NC is here to help people like Nana take full advantage of everything the Internet has to offer. e-NC and the Internet, connecting North Carolina to a better future.

To find out more about getting connected, call 1-866-NCRURAL or visit www.e-nc.org
The Rural Internet Access Authority is leading the e-NC Initiative.

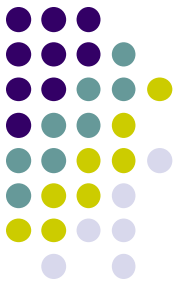


2010 New Type of Survey



- In 2010, broadband economists at **Strategic Networks Group** (www.sngroup.com) conducted research for e-NC and the U.S. Dept. of Commerce looking at how industry sectors and households in NC use broadband.
- This survey was targeted at: **NC small businesses, non-profits, local governments** and the **healthcare sector**.
- The survey was conducted in partnership with:
 - **NC Dept. of Commerce**
 - **NC Center for Nonprofits**
 - **NCACC** (the NC Association of County Commissioners)
 - **NCLM** (the NC League of Municipalities) and
 - **NCHICA** (NC Healthcare Information & Communications Alliance).

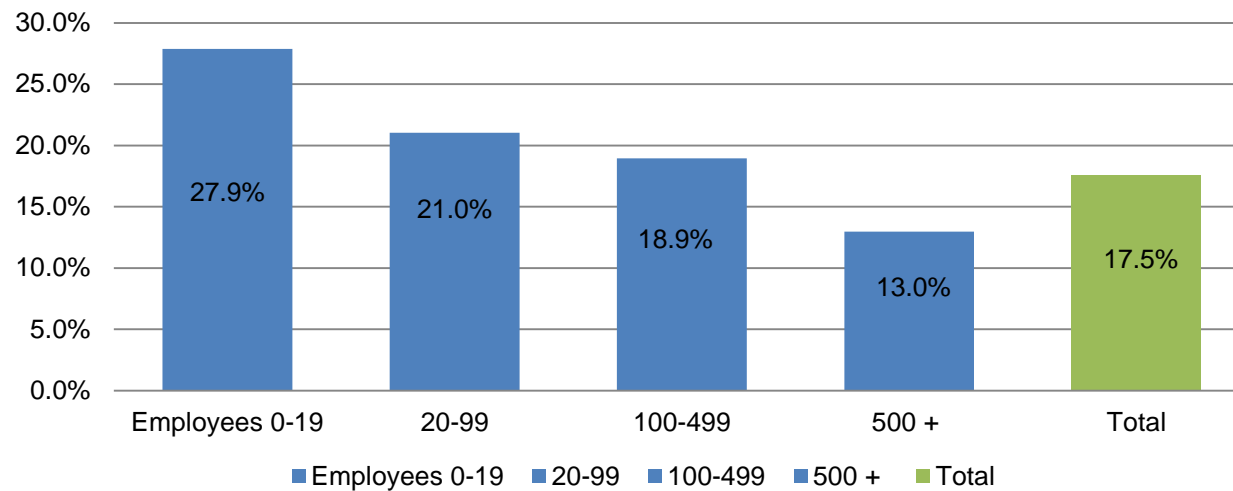
Responses included **6266 organizations** and **1492 households**

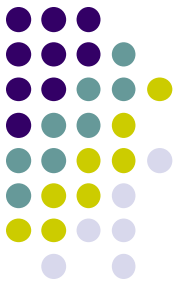


JOBS JOBS JOBS

- **Broadband is responsible for 17.5% of all new jobs in NC.**
- Small businesses are more reliant on broadband for job creation.

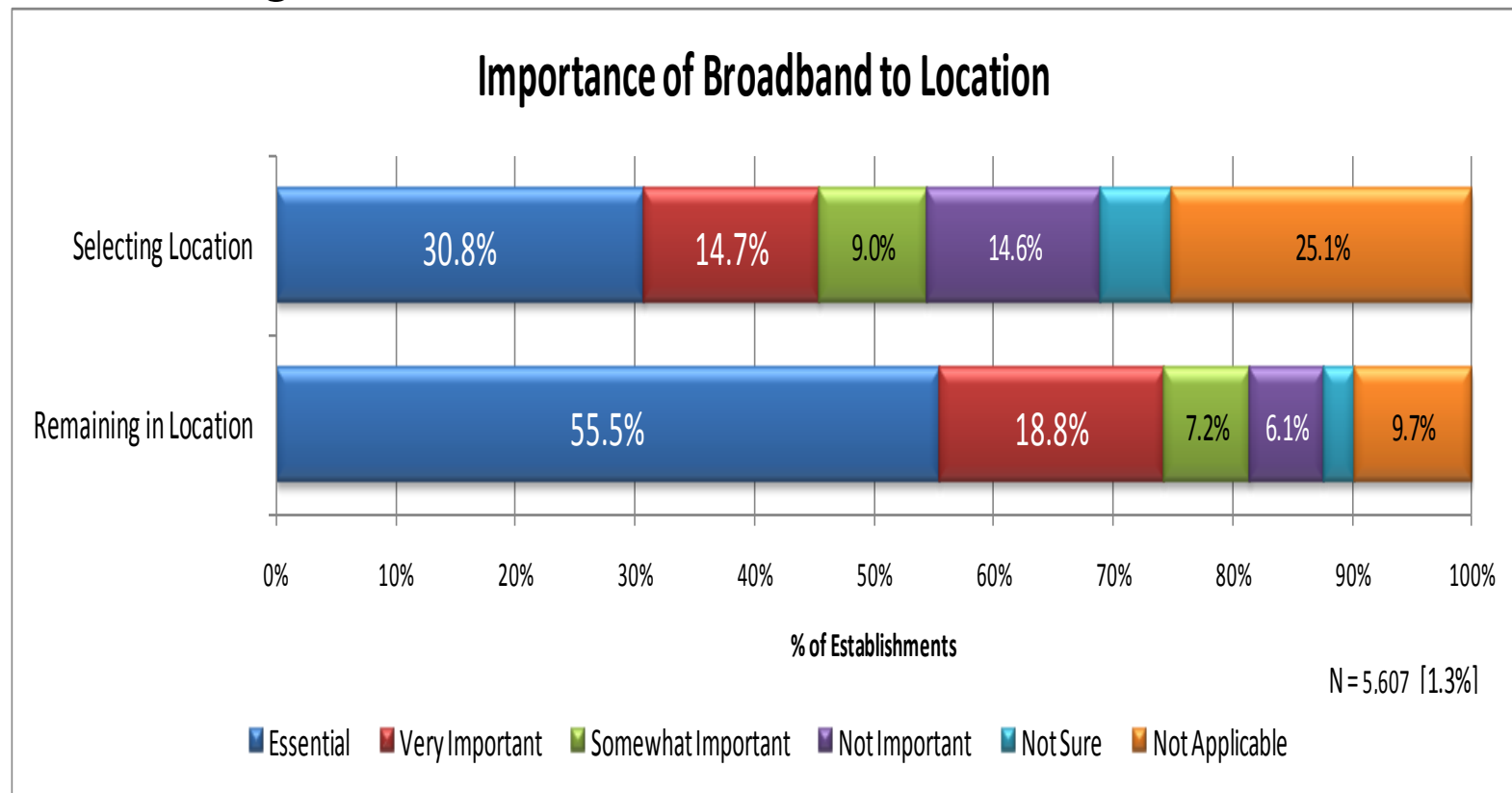
Percent of New Jobs Attributed to Internet
By Size of Employer Group

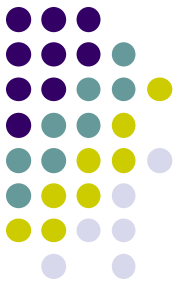




Choosing Where to Locate

- NC Organizations: 55% said broadband is essential for remaining in current location.

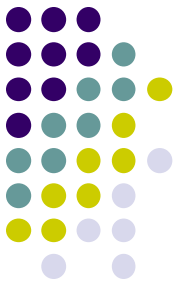




Business Revenue

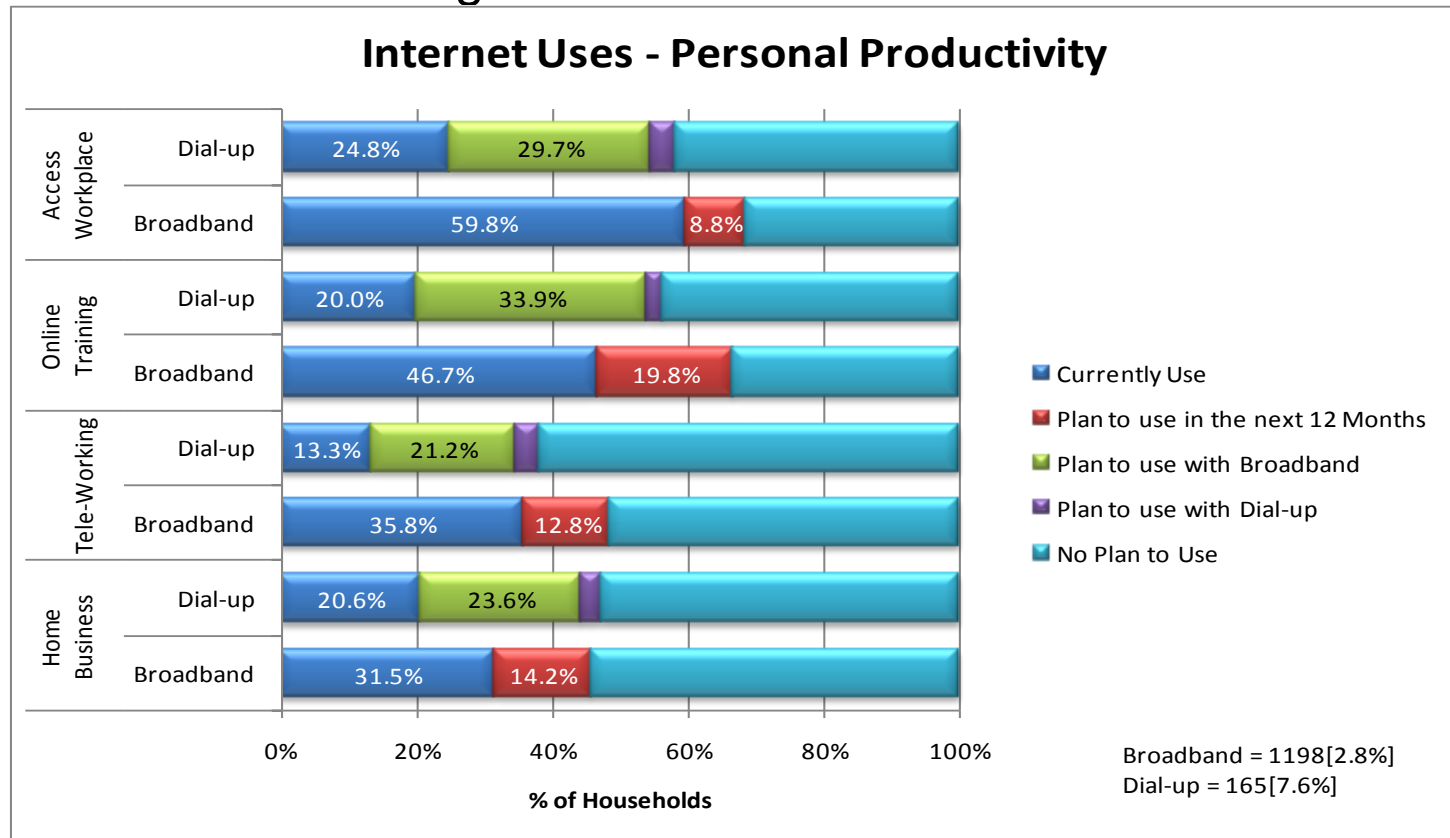
- The Internet is a significant factor in generating revenue. For NC businesses and organizations that employ up to 500 people – 16.6% of revenues are attributed to using the Internet.

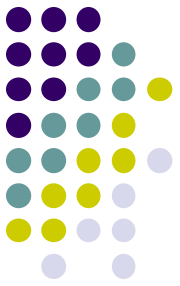
Size of Organization by Number of Employees	Average Revenue per Organization	Average Revenue from Internet Use	% Revenue from Internet
0–19	1,284,576	231,824	18.0%
20–99	8,603,014	1,207,238	14.0%
100–499	38,542,168	6,335,703	16.4%



Personal Home Business

- Nearly 32% of North Carolina home-based businesses currently use broadband. An additional 14% of are planning to create a home-based business using broadband.

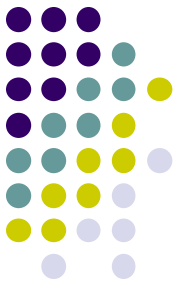




Federal Stimulus Funds

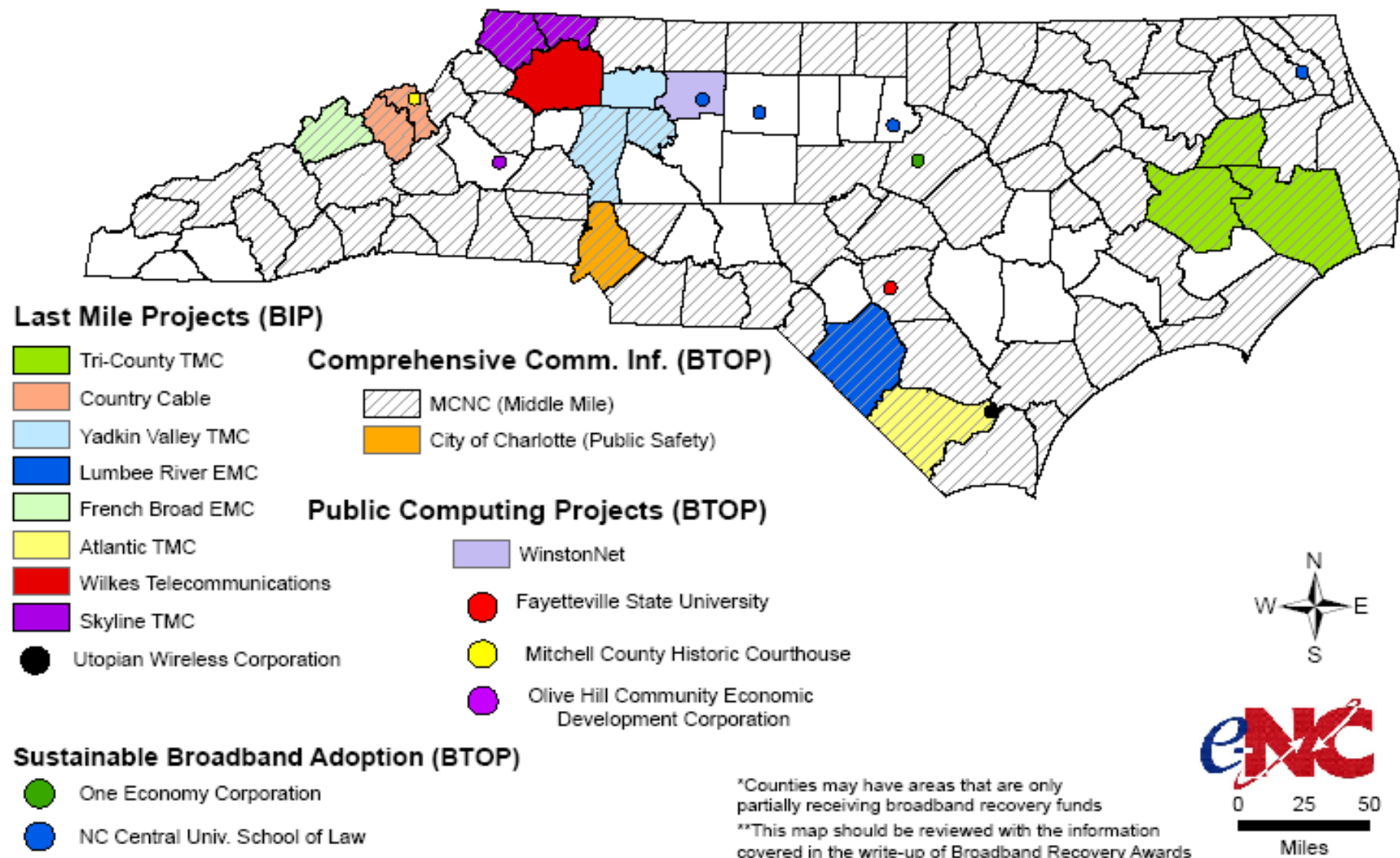
- **NC Award Amounts by Project Type**
- Last Mile Infrastructure Projects (BIP)
 - \$137,896,583
- **Total BIP** (USDA/Rural Utilities Service)
 - \$137,896,583
- Sustainable Broadband Adoption (BTOP)
 - \$3,496,838

Additional Amount Raised from Stimulus Funds



- Comprehensive Comm. Infrastructure (BTOP)
 - \$120,685,299
- Public Computing Projects (BTOP)
 - \$2,626,874
- **Total BTOP (US Dept. of Commerce/NTIA)**
 - \$126,809,011
- **Totals to Date**
 - \$264,705,594

North Carolina Broadband Recovery Projects



Statewide Middle Mile Open Access Fiber Ring



Golden LEAF Rural Broadband Initiative

Golden LEAF Rural Broadband Initiative - 1694.53 Miles In Proposed Funded Service Area (PFSA)

179 Community Anchor Institutions To Be Directly Connected To The North Carolina Research And Education Network (NCREN) across 69 counties (67 completely or partially underserved)



Golden LEAF
FOUNDATION



BROADBANDUSA
CONNECTING AMERICAN COMMUNITIES

- Proposed Fiber Route STOP Round Two
- Proposed Fiber Route STOP Round One
- Existing North Carolina Research and Education Network
- Underserved Counties, Census Tracts in PFSA
- Served Counties, Census Tracts in PFSA
- Proposed Optical Transport Node - 40 Channels
- Community Anchor Institutions To Be Directly Connected To NCREN

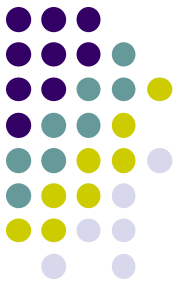
Underserved determination supplied by eNC Authority and BBCGI. Additional data and support provided by NCORE (a program of the Kaos Institute).



MCNC is the independent, non-profit organization that operates the North Carolina Research And Education Network (NCREN).



Working since 2000 in NC



1. **Works directly in communities:**

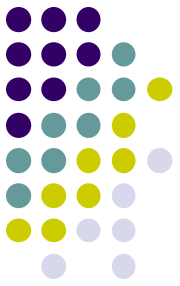
- Developed e-communities plans with all 85 rural counties and the Eastern Band of the Cherokees
 - Charlotte and Wilmington opted in as urban counties
- Provides on-the-ground technical assistance to communities working on broadband planning and adoption efforts

2. **Partners with broadband providers on deployment and adoption efforts:**

- Partners with private sector and non-profit broadband service providers to find solutions to deploy broadband to unserved and underserved areas in the state
- Provided one to one funding to providers (projects were bid)
 - Providers matched at \$1 e-NC dollar to \$1.25 provider dollars

3. **Seeks funding solutions for broadband efforts**

- In past years, e-NC has developed and managed many grant programs: connectivity incentives, e-communities, public Internet access sites, digital literacy training, e-government grants, e-NC Business & Tech Centers and others



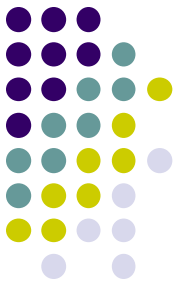
Out of the Box ---Try them

- Lite Up
- My County Research Day
- Find Funding/Train Locals
- Telecenters
- Wireless Pilots Rural Areas 2001
- Ecommunities-first state to do in 2000
- Map our State 2000
- Citizen Surveys-longitudinal 1999-2014



Think Forward//Push it

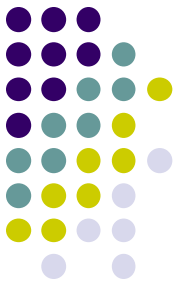
- All schools connected to 40 Gig Network
- GIGU Connectivity Initiated – RFP2-2013
- Telehealth trials/ now statewide NCTN
- 100 sites, going after money for 400+ sites
- 100 GIG Network 2014
- Broadband initiated by counties
- 1-to-1 Computing for Kids
 - 100 of 115 school districts involved
 - All 2400+ Schools have access to GIG network



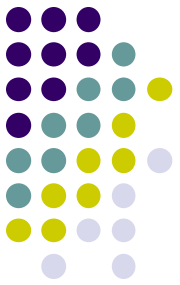
Metrics/Measurement Outcomes

- ROI of \$5 billion in economic impact from broadband deployment across NC-no multiplier applied
- 10 times return from broadband deployment through the American Recovery and Reinvestment Act (ARRA)
- Assisted NC companies to secure more than \$250 million in broadband recovery funding.
- Created Business and Technology Centers in 7 most distressed counties

Business & Tech Centers, cont.



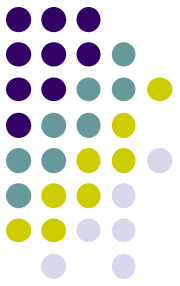
- Created 2000 jobs in Tier I and Tier 2 counties
- Served more than 26,500 clients
- Trained more than 13,000 people in 3,288 classes for total of 1.4 million classroom hours
- Offered technical services to 192 tenant organizations
- Public on-site Internet access to 200,000+ users
- Created Technopreneurs with support
- Training in Entrepreneurship



OUTCOMES, cont.

- BTTs Generated \$221 million additional state revenue from job creation with no multiplier effect
-
- State entity now is NC Broadband
 - Established within Department of Commerce
 - 2010 \$6.6 million through 2014 from NTIA

Critical to Success-Leadership



- Research Initiatives
- Track Initiatives Outcomes & Learn
- Community Involvement
- Statewide Training Summits
- Business and Telecom Industry Involvement
- Teaching how to fundraise
- Communications Campaign
- Involvement of Universities/Harvard
- Support of Governor and Executive & Legislative Branch